

Preface

Welcome to *Psychology Internal Assessment: The Holy Guide to Writing Your Report*! This document was created to facilitate your creation of a high-scoring piece of work. It is intended to act as a guide for you as you whiz your way through the IB Psychology Internal Assessment (IA).

The Holy Guide has been designed to help answer questions that you may have as you write your report and to serve as a tool for proofreading and editing your practicals. It is hoped that you will review this document **before** writing your report. This will help ease the so-called pain of doing your Internal Assessment.

Please use this document with care and glee. Pay careful attention to the format that is required and also to the grading rubric at the end. If you follow the format explained herein, you will have a much better chance of completing the project as required and hopefully achieve higher marks as well. The latter part is where the glee comes in!

I hope that you find this guide useful and that you enjoy your experience.

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Much of the information in this guide was pinched from *the IB Psychology Internal Assessment Guide* (1996), *Open Guides to Psychology: Designing and Reporting Experiments* (Harris, 1992) and support pack for psychology practicals by Hartshill Press.

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General Information about IA

- ◇ Must be word-processed
- ◇ Pages consecutively numbered throughout beginning with Introduction
 - ◇ Use past tense, passive voice and impersonal tone
 - ◇ "It was found that..." rather than "Our results show..."
 - ◇ Use the term *researcher* to refer to yourself
 - ◇ Use *participants* to refer to the people in your study

Section Headings

TITLE PAGE

CONTENTS

ABSTRACT

INTRODUCTION

METHOD

DESIGN

PARTICIPANTS

APPARATUS/MATERIALS

PROCEDURE

RESULTS

DESCRIPTION OF RESULTS

ANALYSIS OF RESULTS

DISCUSSION

CONCLUSION

REFERENCES

APPENDICES

Citations

When carrying out a study for IB Psychology, it is not your goal to produce ground-shattering new theories. What is important is the solid design of a study along with coherent, in-depth understanding of its results.

The best approach to take when designing your study is to find previous research on a topic that interests you and *replicate* it—most published research is quite easily replicable.

With this in mind, proper citation format is key. In developing your study, you draw on background information from psychologists and relate it to what you wish to accomplish (the aim of your investigation). Ideally, you would find primary source documents from respected academic journals. Unfortunately, this is not always possible and some secondary sources are needed.

Your study must contain proper citation format. The reader should be able to refer to your References section and find **every** citation that you include—even secondary sources. Below are samples of how to properly cite your sources. Note that in all cases, the reader would find an entry for Atwood, 1998 in the References section. The final example is of a secondary source—note that this format of secondary citation should only be used when there are few secondary sources. See the References section below for details.

- ◇ Atwood (1998) found that psychology students were highly motivated by grades.
- ◇ In 1998, Atwood found that psychology students were highly motivated by grades.
- ◇ Research shows that psychology students are highly motivated by grades (Atwood, 1998).

Second-hand – no reference to original study in the source.

- ◇ In 1998, Atwood found that psychology students were highly motivated by grades (as cited in Ladd, 1999).

In this case, the References section would include an entry as follows:

- ◇ Ladd, E. (1999). The best students around: Research on TAS students. TAS Press: Taipei, Taiwan.

Second-hand – with bibliographic reference to original study in the source.

- ◇ Atwood (1998) found that psychology students were highly motivated by grades.

In this case, the References section would include an entry as follows:

- ◇ **Atwood, J. (1998). Studies in motivation of psychology students. TAS Press: Taipei, Taiwan in Ladd, E. (1999). The best students around: Research on TAS students. TAS Press: Taipei, Taiwan.**

Be sure to vary your citation format throughout your report.

Title Page

- ◇ Gives clear indication of what is being studied
- ◇ Gives clear indication of type of method used
- ◇ Look at hypothesis and exact variables being investigated
- ◇ "An Experiment to investigate the effects of category headings on the recall of a list of words."

Contents Page

- ◇ Include major subheadings
 - ◇ Begin with Abstract
- ◇ Page numbers clearly indicated

Abstract

- ◇ Summary of the entire investigation
 - ◇ Concise and clearly written
 - ◇ About 150 words
- ◇ Begins with a one-sentence summary, and includes:
 - ◇ Aim of the investigation
 - ◇ Research hypothesis
 - ◇ Type of design
 - ◇ Variables under study
 - ◇ Controls employed
 - ◇ Participants
- ◇ Results - with reference to statistical analysis, if applicable
 - ◇ Conclusions
 - ◇ Mention implication of findings

Introduction

The Introduction should be about 600 words and include background theory and research which logically leads into the aims and hypothesis of your study.

Identify the particular aspect of the discipline of psychology in which your study took place

- ◆ Start with a brief statement about the nature of this area
 - ◆ Include a definition, if meaningful

Introduce the aspect of the larger area to which the study was relevant

Talk about the particular topic that your study addressed

Review the background material relevant to your study

- ◆ This is NOT an exhaustive list of all the research available
- ◆ Include two or three studies which are directly related to your research question
- ◆ These studies will be referred to again in the Discussion section

Outline the precise problem you chose to investigate and describe the way you went about investigating it

- ◆ Briefly state the problem you chose to investigate
- ◆ Give clear justification as to why this topic is important to study
- ◆ Give your reader the *general* idea of how you went about doing your study

Outline the results predicted by your research hypothesis

- ◆ Clarify WHY and HOW your study tests this

State your Research (H_1) and Null (H_0) hypotheses

Methods Section

This section is approximately 400 words. Use the following headings as sub-sections. These sections should be in a text format and NOT in the form of lists.

This section requires *thoroughness* of your description in each of the sub-sections. Anyone should be able to replicate your study EXACTLY by reading through this part of your report.

Design

- ◇ *One of the briefer sections*
- ◇ State which type of design was used and WHY
 - ◇ Describe all controls that were used
- ◇ Discuss ethical considerations taken into account
- ◇ State what the independent variable (IV) was – operational definition
- ◇ State what the dependent variable (DV) was – operational definition

Participants

- ◇ State number of participants in each condition/group
 - ◇ State the age range – and mean, if possible
 - ◇ Include the sex along with the numbers of each sex
- ◇ Give an idea of the group similarities (e.g., 5th grade students)
 - ◇ State method used in selection – be honest!
- ◇ If applicable, in the experiment, discuss how participants were allocated to groups

Apparatus/Materials

- ◇ Needs to be in text form – not a list
- ◇ Describe *what* is used not *how* it is used
- ◇ Do not include references to chairs or tables, etc.
- ◇ A sample of the materials is included in the appendix
- ◇ Include mention of standardized instructions – full description in appendix
- ◇ Include mention of debriefing notes as well – full description in appendix

Procedure

- ◇ Do not discuss the strategy, but rather HOW you did your study
 - ◇ Written in chronological order, clear and concise
- ◇ Must include enough information to allow thorough and complete replication
 - ◇ Include a script of any standardized instructions given
 - ◇ State whether you ran your study in groups or individually
 - ◇ Mention the process of debriefing

Results Section

Use the following headings as sub-sections. In the first, you give an account of the summarized data you collected using descriptive statistics. In the second, you give an account of the nature and outcomes of the inferential statistical analyses you performed on the descriptive data.

Description of Results

- ◇ DO NOT include raw data (i.e., each participant's score) – this goes in appendix
- ◇ Use descriptive statistics to summarize the central tendency and dispersion, if applicable
 - ◇ Central tendency → mean, median, or mode
 - ◇ Dispersion → variance or standard deviation
- ◇ Use text to communicate your data along with numerical reference
- ◇ “the mean number of words recalled by the experimental group (x_1) was 2.5 ($x_1=2.5$)”
 - ◇ n refers to the number of participants ($n=25$)
- ◇ The use of tables or graphs with no written support is unacceptable
 - ◇ Graphs enhance reader understanding and support your text
 - ◇ Tables could include mean scores or frequency of behaviour
 - ◇ All graphs should be on graph paper
- ◇ All graphs must be hand-drawn using pencil or fine-pen—no colored pencils or colors
 - ◇ Properly label all parts

Analysis of Results

- ◇ Use the information from the Description of Results section
- ◇ Used to make estimates or predictions in order to draw conclusions
- ◇ Used to decide the level of significance that was achieved in the study
- ◇ Must include rationale for using the statistical test (i.e. WHY it was chosen)
 - ◇ Include a comment on whether or not the test was parametric
 - ◇ Include details about the level of significance you achieved
 - ◇ State degrees of freedom, if applicable
 - ◇ State the critical value (the one you looked up on the table)
- ◇ “there was a significant difference between the number of letters recalled by the experimental group and the control group ($\chi^2=4.2$, d.f.=1, $p<0.05$)”
 - ◇ Calculations of this test is included in the appendix

Decision of significance: After analyzing your data with inferential statistics, you need to make a decision on the significance of your findings. Were your results due to a *real* difference existing between the groups, or could they have been the result of *chance* or *error*?

Rejecting the null hypothesis: If your results were found to be significant ($p<0.05$), you can *reject the null hypothesis* and *accept your research hypothesis* (i.e., there seems to be a real difference occurred between the groups). This is properly stated as follows:

The results were found to be significant ($p<0.05$), which means that the probability of the results occurring by chance if the null hypothesis were true is less than 5%. Therefore, the null hypothesis was rejected and the research hypothesis was accepted; there appears to be a real difference in the number of words recalled by males and females.

If you cannot reject the null hypothesis (i.e., $p>0.05$) then you can make NO DECISION about your research hypothesis. The non-significant results could be due to a lack of a real difference between the groups or error in the procedure. You have *neither* supported nor rejected your research hypothesis. These possibilities should be explored in the Discussion section.

Discussion Section

This section should be approximately 600 words. Separate your ideas by using paragraphs and *not* by labeling the sections.

Explanation of your findings

- ◇ Describe the results of your study in your own words
- ◇ Comment on whether you did or did not support your research hypothesis
 - ◇ Was there a significant difference between groups/conditions?
 - ◇ Were the findings consistent with the research hypothesis?
 - ◇ Comment on any anomalous (particularly unusual) results

Relationship to background research

- ◇ Try to explain why your participants performed in the way that they did
 - ◇ Refer back to the theoretical evidence offered in the Introduction
- ◇ Do not repeat information from the Introduction, but rather link your results to it
- ◇ If the null hypothesis was accepted, how confident can you be that no difference actually occurs?
- ◇ Suggest further areas of investigation which might shed more light on the subject

Limitations and modifications

- ◇ Evaluate your methodology (i.e., any weaknesses you can identify)
 - ◇ Discuss which factors were out of your control, if applicable
 - ◇ Consider any confounding variable that may have affected your results
- ◇ After identifying problems, suggest ways to remedy them (even if results were significant)

Higher Level: The Discussion section is the most important part of your research paper. You must show depth of understanding of your research results and how they are related to the background research.

DO NOT INTRODUCE NEW STUDIES IN THE DISCUSSION!

DO NOT REHASH WHAT WAS ALREADY STATED IN THE INTRODUCTION!

Conclusion

- ◇ Very brief section
 - ◇ Restate the results of your statistical analysis
- ◇ Comment on whether you supported your research hypothesis or null hypothesis
 - ◇ Do not repeat any of the Discussion
- ◇ Included in order to be certain that you have clearly indicated the outcome of your investigation

References

- ◇ Absolutely vital!
 - ◇ Give details of all studies cited in Introduction and Discussion
 - ◇ One-to-one relationship...
 - ◇ If you cite it, you must include it in your references!
 - ◇ Use the following as samples for your format

Journal Articles

Name. (Date). Title. Journal Title. Volume number, pages

Books

Names. Date. Title of Chapter, "in" Name of Editor(s) with initial(s) first rather than last ((Ed(s)), Title of book, Place of publication: Name of publisher. Edition – if relevant

Names. (Date). Title. Edition. Place of Publication: Publishers.

Secondary References Give full reference to primary source, followed by "in" followed by full reference for secondary source

Smith, J. (1980). Stress in young women. Adolescence, 3, 15-20, in Major, J. (1987). Adolescence, Cambridge: Cambridge University Press.

Appendices

- ◇ Include all information which is too bulky for main text
 - ◇ Examples of materials used
 - ◇ Debriefing instructions
 - ◇ Numerical raw data in tabular form
 - ◇ Statistical calculations
- ◇ DO NOT include completed copies of all materials
- ◇ Numbered consecutively with lower case Roman numerals

HL Rubric

RESEARCH QUESTION	1	2	3
Formulated	Inappropriately	Acceptable	Appropriately
Relevance of Research Question	Unjustified	Partially Justified	Thoroughly Justified

THEORETICAL BACKGROUND	1	2	3	4	5	6
Theories / Studies	None	Weak	Fewer than 2	Lacks Analysis	Weak Analysis	Strong Analysis
Integration (I&D)	Not integrated	Elementary	Mediocre	Acceptable	Good	Excellent
Conceptual Framework	Not Addressed	Improper Framework	Weak	Acceptable	Appropriate	Excellent

IMPLEMENTATION	1	2	3	4	5	6	7
Design	Not Outlined	Inappropriate Design & Unjustified	Inappropriate Design & Justified	Acceptable Design but Unjustified	Acceptable Design & Justified	Most Appropriate Design but Unjustified	Most Appropriate & Justified
Variables	Not Identified	Incomplete Identification	Incorrect Identification	Weak Identification & No Operational Definitions	Acceptable Identification but No Operational Definitions	Acceptable Identification and Operational Definitions	Excellent Identification and Operational Definitions
Controls	No Controls Employed	Incorrect Controls Employed	Incomplete Identification	Mediocre Identification	Acceptable Identification	Good Identification	Excellent Identification
Participants	No Statement	Improper Participants Selected	Proper Participants but Improper Selection Procedure	Selection is not Justified	Selection is Mediocre & Mediocre Justification	Selection is Appropriate & Justified	Selection is Most Appropriate & Well Justified
Procedures	Not Included	Missing Major Information	Sketchy and Difficult to Understand	Basic Explanation	Mediocre Explanation	Appropriately Stated	Clearly Stated with Easy Replication
Ethical Considerations	Not Addressed	Incomplete	Inappropriately Addressed	Addressed at Basic Level	Acceptable	Appropriate	Excellent Consideration & Application

INTERPRETATION	1	2	3	4	5	6	7	8	9
Results	Not Stated	Irrelevant Results Discussed	Seriously Deficient in Information or Not Fully Discussed	Fairly Well Presented, but Some Details are Missing	Basic Reporting with all Details Included	Mediocre Reporting of Results	Acceptable Reporting	Appropriately Reported	Excellent Reporting
Analysis	No Analysis	Unclear	Shows Misunderstanding of Concepts	Very Elementary Analysis of Results	Elementary Analysis and No Relation to Aims	Partially Related to Aims of Study	Elementary Analysis and Related to Aims	Related to Aims and Appropriately Analyzed	Highly Related to Aims and Well Analyzed
Ties to Conceptual Framework	Not Related	Only Partially Related	Faulty Relationship Established	Very Basic	Elementary	Acceptable	Appropriate	Strong	Excellent
Strengths & Weaknesses	Not Identified	Simplistic Identification	Limited Identification	Superficial Identification	Mediocre Identification	Acceptable Identification	Identified but no Improvements	Discussed but no Improvements	Discussed & Improvements suggested
New Theories in Discussion	Yes								No

PRESENTATION	1	2	3	4	5
Format	No Logical Formatting	Not All Parts Present	Improper Order	Acceptable	Excellent
Word Limit	Over 2000	Under 1000	Under 1500	Very Close	1500 – 2000
Terminology	No Terminology Used	Inappropriately Used	Mediocre Level	Acceptable Level	High Level – Used Properly
References	Improper Format	Same Format Used	Acceptable	Good & Varied Style	Excellent & Varied Style
Tables/Graphs	None Included	Inappropriate Use	Inaccurate Format	Acceptable Format	Excellent Format

SL Rubric

RESEARCH QUESTION		1	2
Formulated		Inappropriately Unjustified	Appropriately
Relevance of Research Question			Thoroughly Justified

THEORETICAL BACKGROUND	1	2	3	4
Theories / Studies	None	Fewer than 2/Lacks Analysis	Weak Analysis	Strong Analysis
Integration (I&D)	Not integrated	Mediocre	Good	Excellent
Conceptual Framework	Not Addressed	Weak	Appropriate	Excellent

IMPLEMENTATION	1	2	3	4	5	6
Design	Not Outlined	Inappropriate Design	Acceptable Design but Unjustified	Acceptable Design & Justified	Most Appropriate Design but Unjustified	Most Appropriate & Justified
Variables	Not Identified	Incorrect Identification	Incomplete Identification	Weak Identification & No Operational Definitions	Acceptable Identification and Operational Definitions	Excellent Identification and Operational Definitions
Controls	No Controls Employed	Incorrect Controls Employed	Incomplete Controls Employed	Acceptable Identification	Good Identification	Excellent Identification
Participants	No Statement	Improper Participants	Proper Participants but Improper Selection Procedure	Selection is Mediocre & Mediocre Justification	Selection is Appropriate & Justified	Selection is Most Appropriate & Well Justified
Procedures	Not Included	Missing Major Information	Sketchy and Difficult to Understand	Basic Explanation	Appropriately Stated	Clearly Stated with Easy Replication
Ethical Considerations	Not Addressed	Incomplete	Inappropriately Addressed	Addressed at Basic Level	Appropriate	Excellent Consideration & Application

INTERPRETATION	1	2	3	4
Results	Not Stated	Seriously Deficient in Information or Not Fully Discussed	Acceptable Reporting	Appropriately Reported
Analysis	No Analysis	Shows Misunderstanding of Concepts	Partially Related to Aims of Study	Related to Aims and Appropriately Analyzed
Ties to Conceptual Framework	Not Related	Faulty/Partial Relationship Established	Acceptable	Strong
Strengths & Weaknesses	Not Identified	Limited Identification/Incorrect	Acceptable Identification	Discussed & Improvements suggested
New Theories in Discussion	Yes			No

PRESENTATION	1	2	3	4
Format	Not All Parts Present	Improper Order	Acceptable	Excellent
Word Limit	Under 1000	Over 2000	Very Close	1500 – 2000
Terminology	Inappropriately Used	Mediocre Level	Acceptable Level	High Level – Used Properly
References	Improper Format	Acceptable	Good & Varied Style	Excellent & Varied Style
Tables/Graphs	None Included	Inappropriate Use	Acceptable Format	Excellent Format

Report Checklist

Abstract	Done	To do
Have you stated what you are studying?		
Have you mentioned the aim and hypothesis?		
Have you described the essentials of the method?		
Have you given some details about the participants and where the research was conducted?		
Have you stated your results?		
What is the importance of your research?		
Introduction	Done	To do
Have you referred to some theory?		
Have you described at least two relevant studies but no more than five?		
Is the literature logically linked to the aims?		
Have you stated why you studied this topic?		
Have you justified your hypothesis?		
Have you stated a clear, operationally defined research hypothesis?		
Have you stated a null hypothesis?		
Method	Done	To do
Have you stated the research design?		
Have you explained why each design decision was made?		
If you are conducting an experiment, have you stated the experimental and control conditions?		
If you are conducting an observation, have you described the methods you used?		
Have you stated the independent variable?		
Have you stated the dependent variable?		
Have you explained any controls used and why?		
Have you mentioned ethical considerations?		
Have you described the participants and the population from which they were drawn?		
Have you stated how the participants were selected and allocated to conditions?		
Have you included all apparatus and materials that you used?		
Have you included specimens of apparatus/materials in the appendices?		
Have you described or included standardized instructions given to the participants?		
Have you given sufficient details for someone else to replicate your study?		

Results	Done	To do
Have you given a summary table of raw data in the appendix?		
Have you provided descriptive statistics for your data?		
Have you hand-drawn your graphs and charts on graph paper?		
Have you labeled axes on graphs, columns on tables and given clear titles?		
Have you reported why any statistical tests were used?		
Have you shown the calculations for any inferential statistical tests in the appendix?		
Does your statement of conclusion contain details of the level of significance, the critical and observed values, degrees of freedom, and whether the hypothesis was one- or two-tailed?		
Have you stated the conclusion in terms of the original hypothesis?		
Discussion	Done	To do
Do you refer back to the Introduction?		
Have you stated what your results mean in relation to your hypothesis?		
Did you explain why you got such results?		
Have you compared your results with those of other studies?		
What was wrong (or right) about your design and methods?		
Are any of the criticisms presented without any good explanation?		
How would you improve this study if you were to do it again?		
Have you included ideas for follow-up studies?		
References	Done	To do
Have you included ALL references mentioned?		
Have you followed the correct form for presenting references?		
Appendices	Done	To do
Are these clearly labeled and well set out?		
Report style	Done	To do
Have you checked your spelling and grammar?		
Do you have all of the proper section headings, page numbers, table of contents?		
Is your project within the word limit?		